WHAT IS CLAIMED IS:

1. A method of pre-emphasizing an optical system launch power profile, comprising:

measuring a signal-to-noise ratio (*SNR*) over m spans of an n span optical system, wherein $m < n$; and

pre-emphasizing the launch power profile based on a function of the measured *SNR*.

2. The method of claim 1, wherein each span of the n spans comprises a link and at least one repeater.

3. The method of claim 1, wherein the function comprises an inverse of the *SNR*.

4. The method of claim 1, wherein the *SNR* comprises a *SNR* profile.

5. The method of claim 1, further comprising:

optimizing the pre-emphasis of the launch power profile such that a profile of the *SNR* comprises a substantially constant value.

6. The method of claim 1, further comprising:

selectively repeating the launch power profile pre-emphasis to optimize the measured *SNR*.

7. A system for pre-emphasizing an optical system launch power profile, comprising:

means for measuring a signal-to-noise ratio (*SNR*) over m spans of an n span optical system, wherein $m < n$; and

means for pre-emphasizing the launch power profile based on a function of the measured *SNR*.

8. A method of transmitting signals in an optical system comprising a set of spans, the method comprising:

transmitting optical signals according to a first launch power profile;

determining power-related parameters over a subset of the set of spans; and

transmitting optical signals according to a second launch power profile based on the determined power-related parameters.

9. The method of claim 8, wherein the power-related parameters comprise a signal-to-noise power ratio profile.

10. The method of claim 8, further comprising:

comparing the power-related parameters to a set of desired parameters.

11. The method of claim 10, further comprising:

adjusting the second launch power profile until the determined power-related parameters substantially equal the set of desired parameters.

12. The method of claim 11, wherein the set of desired parameters comprises a signal-to-noise ratio (*SNR*) profile.

13. The method of claim 12, wherein the *SNR* profile comprises a substantially constant SNR value.

14. An optical transmission system, comprising:

a set of spans, wherein each span of the set of spans comprises a link and at least one repeater;

an optical transmitter configured to transmit optical signals over the set of spans according to a first launch power profile; and

a monitor unit configured to determine power-related parameters over a subset of the set of spans,

the optical transmitter further configured to transmit optical signals according to a second launch power profile based on the determined power-related parameters.

15. The system of claim 14, wherein the power-related parameters comprise a signal-to-noise power ratio profile.

16. The system of claim 14, the optical transmitter further configured to:

compare the power-related parameters to a set of desired parameters.

17. The system of claim 16, the optical transmitter further configured to:

adjust the second launch power profile until the determined power-related parameters substantially equal the set of desired parameters.

18. The system of claim 17, wherein the set of desired parameters comprises a signal-to-noise ratio (*SNR*) profile.

19. The system of claim 18, wherein the *SNR* profile comprises a substantially constant SNR value.

20. A method of optimizing optical system signal-to-noise ratio (*SNR*), comprising:

measuring SNR over m spans of a n span optical system, wherein $m < n$; and

adjusting a system launch power profile to optimize the SNR measured over the m spans.

21. The method of claim 20, wherein each span of the n spans comprises a link and at least one repeater.

22. The method of claim 20, wherein the *SNR* comprises a *SNR* profile.

23. The method of claim 22, further comprising:

adjusting the system launch power profile such that the *SNR* profile comprises a substantially constant value.

24. The method of claim 20, further comprising:

selectively repeating the system launch power profile adjustment to optimize the measured *SNR*.

25. An system for optimizing optical system signal-to-noise ratio (*SNR*), comprising:

a monitoring unit configured to measure *SNR* over m spans of an n span optical system, wherein $m < n$; and

an optical transmitter configured to adjust a system launch power profile to optimize the SNR measured over the m spans.

26. The system of claim 25, wherein each span of the n spans comprises a link and at least one repeater.

27. The system of claim 25, wherein the *SNR* comprises a *SNR* profile.

28. The system of claim 27, further comprising:

adjusting the system launch power profile such that the *SNR* profile comprises a substantially constant value.

29. The system of claim 25, further comprising:

selectively repeating the system launch power profile adjustment to optimize the measured *SNR*.

30. The method of claim 3, wherein said inverse of the SNR is normalized based on a channel having a lowest SNR performance.